



Sea Level Rise & Coastal Impacts ADAPTLA Planning for the Los Angeles Region



Sea Level Rise Vulnerability Study for the City of Los Angeles

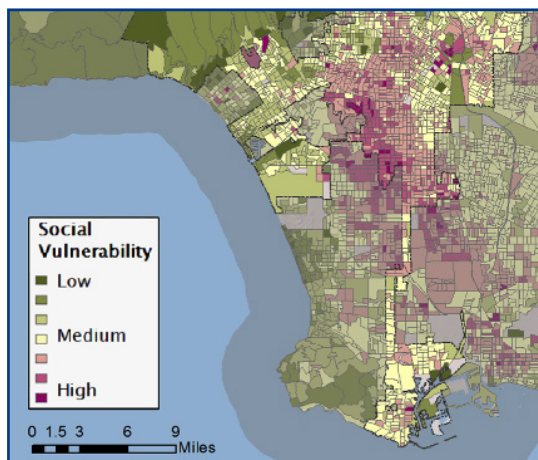
Over the next century, sea level rise in the Los Angeles region is expected to match global projections with an increase of 5 - 24 inches from 2000 to 2050 and 17 - 66 inches from 2000 to 2100. Tides, wave-driven runoff and storm surge sometimes cause coastal flooding in Southern California, especially when big wave storms occur at or near peak high tides. Sea level rise will potentially exacerbate the impacts from these events.

The City of Los Angeles owns and maintains coastal infrastructure that includes two power plants, two wastewater treatment plants, and the Port of Los Angeles, one of the busiest in the world. All of these are situated at about ten feet above sea level.

In 2011, USC Sea Grant engaged City managers and a team of science and outreach experts to develop a science-based and stakeholder-supported adaptation planning process to assess the City's vulnerabilities and begin to prepare for accelerated sea level rise and associated storm impacts.



Flooding in San Pedro during a severe winter storm in 2010. (Photo credit: Robert Casillas)



Analysis conducted by Dr. Julie Ekstrom and Dr. Susi Moser demonstrate high levels of social vulnerability in the low-lying Wilmington and San Pedro communities.

Major Findings from Study

- The City's water systems (waste, storm & potable) are highly vulnerable to sea level rise
- The Port of Los Angeles and the City's energy infrastructure have relatively low vulnerability to sea level rise
- Roads are vulnerable to flooding and erosion, which may impede emergency services and goods movement around the Port
- Direct financial losses from building stock (with a 10-year storm event) are expected to exceed \$410 million with a 0.5 m rise in sea level, or as much as \$714 million with a 1.4 m in sea level rise
- Low-lying Wilmington and San Pedro, and Venice Beach, are home to highly vulnerable populations who may be unable to adapt to impacts of sea level rise because of social or economic challenges

Project Participants

City Adaptation Leadership Team

- Port of Los Angeles
- Department of Water & Power
- Bureau of Sanitation
- Parks and Recreation
- Planning Department
- Emergency Management



Members of the City Adaptation Leadership Team assess their assets' exposure and vulnerabilities (Photo Credit: Marika Schulhof)

Regional Stakeholder Group

- Local Businesses & Industry Experts
- Los Angeles County
- Non-Governmental Organizations
- Council of Governments & SCAG

Regional AdaptLA: Coastal Impacts Planning for Los Angeles County

Building on our work with the City of Los Angeles and based on stakeholder feedback, we are now working to provide more sophisticated technical information for all of Los Angeles County. We have assembled a team of expert modelers to develop this information.

Coastal Storms Modeling
System (CoSMoS)
*Led by Dr. Patrick Barnard
& Dr. Li Erickson*



- Downscaled climate models force atmospheric and wind conditions
- Future storm projections
 - Fluvial inputs



Backshore Characterization,
Coastal Erosion Modeling,
Vulnerability Assessment
*Led by Dr. Bob Battalio &
Dr. David Revell*



- Coastal geomorphology/backshore characterization
 - Sea level rise modeling
 - Sea level rise vulnerability assessment



Shoreline Change Modeling
*Led by Dr. Reinhard Flick
& Dr. Adam Young*



- Short-term wave-driven beach position change
- Long-term sea level rise driven beach position change



Stakeholder Engagement & Capacity-Building

USC Sea Grant has received additional funding to help build capacity within the coastal jurisdictions by providing technical assistance and training to municipal leaders. Policy changes often require difficult decisions. Having informed elected officials and stakeholders allows a community to make informed decisions based on the best available science.

Through open houses, in-person workshops and webinars, we will translate the information to make it accessible to a broad array of stakeholders.



Photo from a recent Open House in Marina del Rey. Stakeholder engagement and community outreach are critical components to effective sea level rise and coastal impacts planning (Photo Credit: Monica Ly).

For more information about [Regional AdaptLA](#),
please contact Juliette Finzi Hart (jahart@usc.edu | 213.740.8602)
Or visit our website: dornsife.usc.edu/uscseagrant/adaptla

Funding for Regional AdaptLA

